

## Appendix F: The Pennsylvania Technology Inventory (PATI) Data Tables

Across the State of Pennsylvania, over 50,000 elementary, middle school, and high school teachers took the Pennsylvania Technology Inventory. The analyses presented here contrast the responses of the 5,131 Classrooms for the Future teachers and the 14,263 non CFF High School Teachers who participated in the survey.

### Use of Technology

Q 12: How much time per week does a typical student in your class(es) use technology while at school?						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
More than 2 hours per week	31.50	27.50	4.00	<b>804.80</b>	<b>5.00</b>	<b>p&lt;.001</b>
1 to 2 hours per week	33.50	21.00	12.50			
30 to 60 minutes per week	20.70	17.50	3.20			
Less than 30 minutes per week	13.00	26.00	-13.00			
Not at all	1.30	7.60	-6.30			

Q 13 A 1: Technology Usage: How often do students in your class(es) use technology to do the following? Communicate (for example, over email or through discussion boards) with experts, peers, and others						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Daily	14.10	12.30	1.80	<b>574.86</b>	<b>6.00</b>	<b>p&lt;.001</b>
Weekly	15.30	9.40	5.90			
Monthly	9.50	4.80	4.70			
Quarterly	4.60	3.60	1.00			
Rarely or never	41.50	40.10	1.40			
Not applicable	14.80	29.60	-14.80			

Q 13 A 2: Technology Usage: How often do students in your class(es) use technology to do the following? Solve real-world problems (i.e. involving situations, issues, and tasks that people actually tackle in the outside world)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Daily	7.70	10.40	-2.70	<b>870.68</b>	<b>6.00</b>	<b>p&lt;.001</b>
Weekly	23.90	16.20	7.70			
Monthly	19.40	10.40	9.00			
Quarterly	16.00	11.60	4.40			
Rarely or never	25.00	29.10	-4.10			
Not applicable	7.60	22.00	-14.40			

Q 13 A 3: Technology Usage: How often do students in your class(es) use technology to do the following? Produce print products						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Daily	7.80	14.10	-6.30	<b>515.63</b>	<b>6.00</b>	<b>p&lt;.001</b>
Weekly	32.10	22.80	9.30			
Monthly	23.90	16.90	7.00			
Quarterly	12.30	14.70	-2.40			
Rarely or never	16.70	16.70	0.00			
Not applicable	6.90	14.40	-7.50			

Q13 A 4: Technology Usage: How often do students in your class(es) use technology to do the following? Produce multi-media, Web, or presentation products						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Daily	2.50	5.70	-3.20	<b>606.16</b>	<b>6.00</b>	<b>p&lt;.001</b>
Weekly	9.80	7.60	2.20			
Monthly	26.00	15.80	10.20			
Quarterly	25.70	20.90	4.80			
Rarely or never	26.40	29.30	-2.90			
Not applicable	9.30	20.40	-11.10			

Q 13 A 5: Technology Usage: How often do students in your class(es) use technology to do the following? Conduct online research						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Daily	5.90	9.10	-3.20	<b>335.65</b>	<b>6.00</b>	<b>p&lt;.001</b>
Weekly	27.60	20.00	7.60			
Monthly	26.80	20.90	5.90			
Quarterly	18.90	21.60	-2.70			
Rarely or never	14.70	16.70	-2.00			
Not applicable	5.90	11.50	-5.60			

Q 13 A 6: Technology Usage: How often do students in your class(es) use technology to do the following? Use drill and practice or tutorial software						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Daily	5.70	8.60	-2.90	<b>524.51</b>	<b>6.00</b>	<b>p&lt;.001</b>
Weekly	19.60	13.60	6.00			
Monthly	16.80	10.60	6.20			
Quarterly	10.00	8.50	1.50			
Rarely or never	35.00	32.90	2.10			
Not applicable	12.70	25.50	-12.80			

Q 13 A 7: Technology Usage: How often do students in your class(es) use technology to do the following? Use the Internet to Collaborate with Students In and Beyond your school.						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Daily	4.00	5.00	-1.00	<b>418.21</b>	<b>6.00</b>	<b>p&lt;.001</b>
Weekly	8.40	6.10	2.30			
Monthly	7.30	4.80	2.50			
Quarterly	5.10	3.90	1.20			
Rarely or never	56.10	46.50	9.60			
Not applicable	18.90	33.40	-14.50			

Q 13 A 8: Technology Usage: How often do students in your class(es) use technology to do the following? Visually represent or investigate concepts (e.g., through concept mapping, graphing, reading charts)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Daily	6.50	5.30	1.20	<b>970.850</b>	<b>6.00</b>	<b>0.00</b>
Weekly	21.20	12.40	8.80			
Monthly	21.20	12.30	8.90			
Quarterly	16.20	12.30	3.90			
Rarely or never	26.10	32.30	-6.20			
Not applicable	8.50	25.10	-16.60			

Q 13 A 9: Technology Usage: How often do students in your class(es) use technology to do the following? Use digital tools and peripheral devices (e.g., digital cameras, probes, scanners) to enhance their learning or their school work.						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Daily	3.30	6.10	-2.80	<b>526.23</b>	<b>6.00</b>	<b>p&lt;.001</b>
Weekly	9.70	8.70	1.00			
Monthly	14.40	9.20	5.20			
Quarterly	16.30	11.00	5.30			
Rarely or never	42.30	37.60	4.70			
Not applicable	13.80	27.10	-13.30			

Q 14: Technology Usage: How has the amount of time that students use technology in your classroom changed since last year?						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
A significantly more time	42.00	13.00	29.00	<b>2601.10</b>	<b>5.00</b>	<b>0.00</b>
A little more time	37.70	29.70	8.00			
About the same time	18.30	51.60	-33.30			
A little less time	1.30	3.00	-1.70			
Significantly less time	0.60	2.60	-2.00			

Q 15 1-6 Technology Usage: During this school year, which of the following applications do students in your classes use (or will they use) to demonstrate their learning?						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Word Processed Documents	81.60	76.20	5.40	<b>61.36</b>	1.00	p<.001
Presentations	72.80	58.10	14.70	<b>332.23</b>	<b>1.00</b>	<b>p&lt;.001</b>
Electronic Portfolios	8.40	9.80	-1.40	<b>8.56</b>	1.00	p<.01
Video or Audio Products	30.40	19.40	11.00	<b>250.51</b>	1.00	p<.001
Electronic Art	15.30	16.10	-0.80	<b>1.54</b>	1.00	p<.001
Websites	50.10	44.10	6.00	<b>51.82</b>	<b>1.00</b>	<b>p&lt;.001</b>
Models	16.10	9.10	7.00	<b>182.79</b>	<b>1.00</b>	<b>p&lt;.001</b>
Submissions to Journals, newspapers, or Magazines	17.00	13.90	3.10	<b>26.95</b>	1.00	p<.001

## Teaching and Technology

Q 16: When designing technology-supported learning experiences, how frequently do you use research to guide your decision-making? (Select one):						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Always or almost always	25.60	23.70	-2.00	<b>326.69</b>	<b>5.00</b>	<b>p&lt;.001</b>
Sometimes	53.80	45.80	8.00			
Never or almost never	12.80	13.40	-0.60			
I don't know	6.40	9.10	-2.70			
I don't use technology to support student learning	1.50	7.90	-6.40			

Q 17 A1: When designing my lessons, I regularly think about whether technology could enhance my teaching or student learning.						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	42.5	30	12.5	<b>402.631</b>	<b>4</b>	<b>p&lt;.001</b>
Agree	48.1	50.1	-2			
Disagree	7.8	15.9	-8.1			
Strongly Disagree	1.4	3.7	-2.3			

Q 17 A 2: When selecting education technologies, I refer to and base my selections on current research on their effectiveness.						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	13.40	13.80	-0.40	<b>72.89</b>	<b>4.00</b>	<b>p&lt;.001</b>
Agree	58.70	53.70	5.00			
Disagree	24.60	26.60	-2.00			
Strongly Disagree	3.00	5.60	-2.60			

## Teacher Attitudes about Technology Use

Q 18 A 1: I regularly use technology to enhance learning in my classroom.						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	37.30	28.20	9.10	<b>423.13</b>	<b>4.00</b>	<b>p&lt;.001</b>
Agree	46.40	41.00	5.40			
Disagree	14.60	25.60	-11.00			
Strongly Disagree	1.40	4.80	-3.40			

Q 18 A 2: I have Classroom Management and Organizational Strategies for using Technology						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	30.40	24.80	5.60	<b>233.70</b>	<b>4.00</b>	<b>p&lt;.001</b>
Agree	54.30	50.00	4.30			
Disagree	13.70	20.40	-6.70			
Strongly Disagree	1.50	4.50	-3.00			

Q 19 A 2: I have effective strategies for assessing the content of students' technology-supported work (e.g., assessing student work when the product includes research from several online sources, or when the product is a web page, or digital video rather than the traditional essay).						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	22.70	21.00	1.70	<b>103.72</b>	<b>4.00</b>	<b>p&lt;.001</b>
Agree	47.80	42.50	5.30			
Disagree	26.00	29.90	-3.90			
Strongly Disagree	3.30	6.20	-2.90			



Q 19 A 3: I feel comfortable using technology to help gather, analyze, and interpret data on student progress (for example, by graphing trends in achievement, or using hand-held computers to collect data on students as they are learning).						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	74.70	66.00	8.70	<b>147.29</b>	<b>4.00</b>	<b>p&lt;.001</b>
Agree	20.90	26.30	-5.40			
Disagree	3.40	5.30	-1.90			
Strongly Disagree	0.80	2.10	-1.30			

### School Support of Technology Use

Q 23 A 2: Our academic learning standards or content standards specifically incorporate 21st Century skills (such as information literacy, visual literacy, self-direction, etc)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Very true	20.40	21.40	-1.00	<b>268.87</b>	<b>4.00</b>	<b>0.00</b>
Somewhat true	58.10	50.60	7.50			
Not at all true	11.90	9.00	2.90			
I don't know	9.50	18.90	-9.40			

Q 27 A 1: Leadership: Rate your agreement with the following statements. In my school: Innovative, technology-supported teaching practices are rewarded (e.g., through public recognition, software or equipment for professional use, stipends for professional development)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	12.90	11.30	1.60	<b>15.67</b>	<b>4.00</b>	<b>p&lt;.01</b>
Agree	43.00	42.30	0.70			
Disagree	34.00	35.40	-1.40			
Strongly Disagree	10.10	10.80	-0.70			

Q 27 A 2: Leadership: Rate your agreement with the following statements. In my school: Risk-taking in exploring innovative practices with learning technology is encouraged and accepted						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	23.80	16.30	7.50	<b>280.56</b>	<b>4.00</b>	<b>p&lt;.001</b>
Agree	62.30	59.90	2.40			
Disagree	11.90	19.30	-7.40			
Strongly Disagree	2.00	4.30	-2.30			

Q 27 A 3: Leadership: Rate your agreement with the following statements. In my school: Research and best-practice are viewed by teachers and administrators as valuable and necessary for making decisions about technology use						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	17.10	15.40	1.70	<b>37.23</b>	<b>4.00</b>	<b>p&lt;.001</b>
Agree	63.40	62.60	0.80			
Disagree	17.50	18.50	-1.00			
Strongly Disagree	1.90	3.30	-1.40			

Q 27 A 4: Leadership: Rate your agreement with the following statements. In my school: Teachers are excited about learning new ways of using learning technologies to improve student learning in their content areas or grade levels						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	18.60	14.80	3.80	<b>83.22</b>	<b>4.00</b>	<b>p&lt;.001</b>
Agree	65.20	63.70	1.50			
Disagree	14.50	18.80	-4.30			
Strongly Disagree	1.60	2.40	-0.80			

Q 27 A 5: Leadership: Rate your agreement with the following statements. In my school: Teachers are not afraid to learn about new technologies and use them with their class(es).						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	14.50	13.00	1.50	<b>25.27</b>	<b>4.00</b>	<b>0.00</b>
Agree	63.80	62.40	1.40			
Disagree	20.10	22.20	-2.10			
Strongly Disagree	1.50	2.20	-0.70			

### School Leadership and Technology Use

Q 27 A 6: Leadership: Rate your agreement with the following statements. In my school: School leadership is willing to support - through funding or manpower - teachers' efforts at innovation and technology integration.						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	21.90	17.30	4.60	101.02	4.00	p<.001
Agree	56.90	55.50	1.40			
Disagree	16.90	20.70	-3.80			
Strongly Disagree	4.20	6.30	-2.10 0.00			

Q 27 A 7: Leadership: Rate your agreement with the following statements. In my school: Practices identified as research-based or proven - including lesson plans and curricula - are posted online so that they are accessible to all teachers						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	9.40	9.00	0.40	<b>6.055</b>	<b>4.00</b>	<b>0.20</b>
Agree	38.80	39.80	-1.00			
Disagree	41.70	40.50	1.20			
Strongly Disagree	9.90	10.40	-0.50 0.00			

Q 27 A 8: Leadership: Rate your agreement with the following statements. Incentives are provided to teachers who adopt proven best practices related to technology (e.g., laptops, conference attendance, stipends for professional development)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Strongly Agree	8.50	7.00	1.50	<b>30.37</b>	<b>4.00</b>	<b>0.00</b>
Agree	33.60	31.10	2.50			
Disagree	40.20	42.30	-2.10			
Strongly Disagree	17.50	19.20	-1.70			

### In School Access to Technology

Q 33 A 1: Rate you access to the following items while at school: An amount of technology, conveniently placed, to allow for the successful implementation of technology-supported learning in my classroom						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	35.70	17.40	18.30	<b>1189.01</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	35.60	28.40	7.20			
Adequate or pretty Good	20.40	29.30	-8.90			
Very poor/Barely adequate	7.60	21.30	-13.70			
Non-existent	0.60	3.50	-2.90			

Q 33 A 2: Rate you access to the following items while at school: Sufficient numbers of computers and other equipment (e.g., cameras, printers) so I can implement technology-supported learning opportunities as I want						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	32.80	14.80	18.00	<b>1278.98</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	31.90	23.30	8.60			
Adequate or pretty Good	22.50	29.40	-6.90			
Very poor/Barely adequate	11.80	28.30	-16.50			
Non-existent	0.90	4.10	-3.20			

Q 33 A 3: Rate you access to the following items while at school: Computers and other equipment where I need them (e.g., in my classroom; in a science lab)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	38.30	17.10	21.20	<b>1376.90</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	29.90	23.40	6.50			
Adequate or pretty Good	20.10	28.90	-8.80			
Very poor/Barely adequate	10.50	25.50	-15.00			
Non-existent	1.10	5.00	-3.90			

Q 33 A 4: Rate you access to the following items while at school: Reliability of computers, printers, projectors, and other equipment (i.e., it works when I need it)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	20.60	14.40	6.20	<b>325.67</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	35.40	28.60	6.80			
Adequate or pretty Good	30.70	34.50	-3.80			
Very poor/Barely adequate	12.50	20.30	-7.80			
Non-existent	0.70	2.30	-1.60			

Q 33 A 5: Rate you access to the following items while at school: Reliable, high-speed access to the Internet in the classrooms, labs, and media centers						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	27.50	22.60	4.90	<b>115.82</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	35.00	32.50	2.50			
Adequate or pretty Good	26.50	29.40	-2.90			
Very poor/Barely adequate	10.20	13.50	-3.30			
Non-existent	0.80	2.00	-1.20			

Q 33 A 6: Rate you access to the following items while at school: Software, appropriate for my content area and the age of my students, which I want to use with class(es)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	20.30	15.90	4.40	<b>227.19</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	34.20	27.80	6.40			
Adequate or pretty Good	27.10	28.90	-1.80			
Very poor/Barely adequate	14.60	19.40	-4.80			
Non-existent	3.80	7.80	-4.00			

Q 33 A 7: Rate you access to the following items while at school: Technology tools for my own productivity (e.g., electronic gradebooks, word processing, presentation software)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	47.40	33.70	13.70	<b>422.45</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	37.50	38.70	-1.20			
Adequate or pretty Good	12.10	20.70	-8.60			
Very poor/Barely adequate	2.60	5.60	-3.00			
Non-existent	0.40	1.20	-0.80			

Q 33 A 8: Rate you access to the following items while at school: Distance Learning Opportunities (for example, online courses or professional development offered through video-conferencing)						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	14.60	10.00	4.60	<b>199.94</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	30.80	24.90	5.90			
Adequate or pretty Good	26.90	28.60	-1.70			
Very poor/Barely adequate	16.20	20.30	-4.10			
Non-existent	11.40	16.10	-4.70			

Q 33 A 9: Rate you access to the following items while at school: Technical Support with little or no wait time.						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	20.20	16.70	3.50	<b>143.27</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	35.20	29.70	5.50			
Adequate or pretty Good	28.80	31.80	-3.00			
Very poor/Barely adequate	13.90	18.50	-4.60			
Non-existent	1.70	3.30	-1.60			

Q 33 A 9: Rate you access to the following items while at school: Instructional support that helps me Integrate Technology						
	CFF Teacher Frequency	Non CFF Teacher Frequency	Change	Chi Square Value	DF	Significance
Excellent	20.10	12.20	7.90	<b>415.20</b>	<b>5.00</b>	<b>p&lt;.001</b>
Good	33.20	26.90	6.30			
Adequate or pretty Good	29.40	32.60	-3.20			
Very poor/Barely adequate	15.10	22.40	-7.30			
Non-existent	2.10	5.80	-3.70			